REMARKS

Applicant thanks the Examiner for the indication of allowable subject matter in Claims 19-24 and 32-37. Reconsideration and reexamination is requested in view of the above amendments to the claims and the following remarks. Claims 1, 18, 26, and 27 have been amended and new claims 50-54 have been added. Support for the amendments and new claims can be found in the specification, as originally filed, for example at Fig. 3; page 3, lines 16-18; and page 6, line 12 to page 7, line 6. Claims 39, 46, and 47 have been cancelled. Accordingly, Claims 1-2, 16-28, 40-45, and 48-54 are currently pending in this application.

New Matter Objection And 35 U.S.C. 112 Rejections

The Examiner objects to sentence added at the end of the paragraph at page 7, line 24, in the Amendment filed Jan. 8, 2003, under 35 U.S.C. 132(a). The Examiner also did not accept the drawing of Fig. 3, filed Feb. 25, 2003, because the Examiner contends the amended drawing contains new matter. More particularly, the Examiner contends that the following sentence added at the end of the paragraph at page 7, line 24, is considered new matter: "As shown in Fig. 3, a fringe material can be applied to peripheral edges of the flocked release sheet 1 or substrate 15 during this manufacturing process." Similarly, the Examiner rejected claims 43 and 45 under 35 U.S.C. 112, first paragraph, because, according to the Examiner, the phrase "comprising a fringe material extending outwardly from peripheral edges of the substrate" is not supported by the specification.

Applicant respectfully disagrees with the Examiner's position. While the Examiner notes that the original Fig. 3 did not identify the fringe material by reference numeral 50, the original Fig. 3 did indeed identify a fringe material. Also, while the Examiner contends that the specification as originally filed never discussed a "fringe material," Applicant notes that there is no requirement that the "fringe material" be specifically discussed in the specification if it is disclosed in the drawings. For example, *see* MPEP 2163.02, "[a]n applicant shows possession of the claimed invention by describing the claimed invention with all its limitations using such descriptive means as words, structures, figures, diagrams, and formulas that fully set forth the claimed invention." *Lockwood v.*

American Airlines, Inc., 107 F.3d 1565, 1572 (Fed. Cir. 1997). Fig. 3 clearly illustrates a fringe material extending from the peripheral edges of the flocked release sheet.

Furthermore, the Examiner states that "while Fig. 3 may show a 'fringe material,' without any recitation in the specification to fringe, Fig. 3 can also be interpreted as an exaggerated view of the edges of flocked surface of the transfer." Applicant submits that the Examiner's position is incorrect. The proper query is what the specification reasonably conveys to the artisan, not what it may convey to the Examiner. *See* MPEP 2163.02. It is therefore improper for the Examiner to suggest that Fig. 3 may be an exaggerated view of the edges of flocked surface of the transfer. Instead, the proper query is what Fig. 3 would convey to one skilled in the art. Applicant submits that one skilled in the art would readily appreciate that Fig. 3 illustrates a transfer to be contacted with a thermoplastic sheet and that the transfer of Fig. 3 has flock adhered to a periphery of the transfer 1 since there is no indication (by dotted lines, or otherwise) that flock adhered by release agent to a bottom side of the transfer 1 is being shown as extending into a body or interior of the transfer 1. If such were the case, Fig. 3 would properly show dotted lines illustrating that the flock fibers extending from the periphery have an opposing end which extends into the interior of the transfer 1. Accordingly, there is ample support in the specification for the addition of the sentence at page 7, line 24 and Claims 43 and 45.

In addition, the Examiner rejected Claim 41 as containing new subject matter. According to the Examiner, the specification does not clearly support the limitation that "at least most" of an adjacent surface of the transfer is in direct physical contact with the thermosetting film. Applicant respectfully disagrees with the Examiner's position. First, Claim 41 more specifically recites the limitation "wherein the flock comprises a plurality of fibers and at least most of the plurality of fibers are in direct contact with the hot melt sheet." There is ample support in the specification for this limitation. For example, one skilled in the art would readily appreciate by reference to Fig. 3 that, in one embodiment, the transfer 1, thermoplastic hot melt sheet 13, and the substrate 15 are of a substantially similar size and shape. Thus, when each of the components are brought into contact

with another of the components as described at page 6, line 14 to page 7, line 6, at least most of the plurality of flock fibers on the underside of the transfer 1 must be in direct contact with the thermoplastic sheet. Therefore, the specification provides support for the subject matter of Claim 41. Applicant requests the rejections under 35 U.S.C. 112, first paragraph, and the objection under 35 U.S.C. 132 be withdrawn.

35 U.S.C. 103 Rejections

Claims 1, 16, 26, 27, 29, 39, 40, 46, 48, and 49 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,687,527 to Higashiguchi (Higashiguchi) in view of U.S. Patent No. 4,810,549 to Abrams. Applicant respectfully traverses the rejections for the following reasons.

First, it is important to understand that the product produced by the claimed invention is substantially different from the products produced by the prior art. In other words, because there are significant differences in the manufacturing processes of the claimed invention and known processes, the resulting products are also novel and nonobvious over known products produced by such known processes. In one embodiment of the present invention, as shown in Fig. 5 of the present specification, a continuous web of a transfer 1 (having flock adhered thereto), a thermoplastic sheet 13, and a substrate 15 can be brought into contact with one another in a continuous process to provide a flocked article having flock adhered directly to a substrate by a uniform, solid, and continuous thermoplastic hot melt sheet. In such an embodiment, most or substantially all of the flock will be contacted and adhered to the thermoplastic sheet. The flock or adhesive is not applied in a pattern. By doing so, this process has numerous advantages over the prior art. For example, the process of the present invention provides a uniform distribution of adhesive across the substrate, avoids the danger of the vapors associated with known liquid adhesives, enables the transfer to be sold independently of the substrate to which it may be ultimately adhered to, and enables an in-line, continuous process, thereby saving considerable expense and money as compared to the prior art, and eliminates the need for a binder adhesive.

In contrast, the prior art teaches at least three different methods to produce products having substantially different characteristics than the claimed products of the present invention. A first method is to spray a patterned adhesive onto a substrate to pattern the adhesive in a desired design, thereafter apply a flocked paper to the adhesive, apply heat, and remove the flock paper and flock which is not contacted by the patterned adhesive. Higashiguchi, for example, in Figs. 1 and 2 and at col. 1, line 56 to col. 2, line 12, discloses that in some conventional methods, a hot-melt thermoplastic synthetic resin is used as the patterned adhesive for transplanting flock planted on the flocked paper 6 to the fabric substrate. After applying heat, the paper is peeled off and "there appear portions of the flock transplanted on the fabric 8 at which the hot melt adhesive 2 has impregnated to and dried and hardened at the roots of the flock..."

A second method is to instead screen print an adhesive onto a substrate to pattern the adhesive as taught by Higashiguchi, for example. Briefly, Higashiguchi teaches a method for printing a predetermined flock pattern on a substrate using a cross linking type synthetic resin as the printing ink. The printing ink/adhesive is screen printed as a layer 16 on a fabric substrate 12 in a predetermined design pattern. Thereafter, a flock sheet or mount is applied endways to the adhesive layer by pressing with heat the flock fibers against the adhesive layer in the design pattern. Subsequently, the flock sheet is peeled off the substrate surface to transfer the bonded flock fibers from the flock sheet to the substrate. See Higashiguchi, col. 3, lines 5-18 and col. 4, lines 44-59.

A third method is to spray the adhesive onto the flock as taught by Abrams, for example. Abrams teaches printing a release adhesive on a base sheet in a predetermined design. Thereafter, different color flock is sequentially flocked into its designated part of the adhesive design, separated from each other by screens. The flock is then coated with a binder adhesive 10 such as a water based acrylic 1 which binds the flock into a unit. The binder 10 may contain an additional adhesive, i.e., a hot melt, for binding the transfer to a substrate. *See* Abrams, col. 2, lines 16-24 and 55-61.

Numerous deficiencies exist with respect to each of the above methods and the resulting articles they produce. First, at least the processes of spraying the adhesive in a pattern on the

substrate (Higashiguchi, Figs. 1 and 2) or on the flock (Abrams) produces an article having a substantially non-uniform deposit of adhesive. For example, prior art Figs. 1-2 of Higashiguchi clearly illustrate a sprayed adhesive which forms non-uniform globules of the adhesive on the substrate. This is highly undesirable. Instead, a uniform distribution of the adhesive is desired because when the distribution of adhesive is substantially uniform on the substrate, the depth to which the flock fibers are imbedded in the adhesive can also be more accurately controlled and reduced. By exposing more of the flock fibers, decreasing the depth to which the flock fiber is imbedded in the adhesive, and ensuring the flock fibers are of a similar length, a softer flocked final product can be provided. An article manufactured by spraying the adhesive on the substrate as shown by Fig. 1 of Higashiguchi, for example, would have a non-uniform distribution of adhesive.

Second, when the adhesives are in the form of a liquid, which they must be to apply the adhesive by spraying or by coating as in each of the methods discussed above, such adhesives are known to include airborne particles that are volatile and flammable which are known to contain a substantial amount of volatile organic compounds (VOC's) and which can provide difficulties in complying with EPA and OSHA regulations. The flammability of the solvents is of particular concern and danger when mixed with electrostatic flock. As a result of these substantial health, compliance, and safety concerns, prior to the present invention, the use of thermoplastic adhesives decreased substantially despite their desirable thermal and adhesive properties. However, the use of a pre-formed, solid, continuous, and self-supporting hot melt sheet in the present invention enables the use of thermoplastic adhesives without the health, compliance, and safety concerns previously associated with such adhesives.

Third, when the adhesives are screen printed on the substrate as taught by Higashiguchi, for example, the resulting products cannot be sold independently of the substrate to which the flock is adhered. Thus, such processes cannot produce the flocked transfer product that can be sold and shipped separately from the substrate to which may eventually be adhered to. This is a substantial

deficiency of such methods. In contrast, the flocked transfer of the claimed invention can be sold as a transfer or as a product adhered to a substrate.

Fourth, screen printing or spraying an adhesive onto a substrate or a release sheet in a predetermined pattern generally renders such processes incapable of being an in-line, continuous process because the liquid adhesive generally cannot be repetitively applied to the substrate, the above methods are incapable of producing articles on a continuous basis as in the present invention.

As a result of the substantial differences between the process of the present invention and known processes, neither Higashiguchi nor Abrams teach or suggest, individually or collectively, the resulting product of the process of the present invention, including at least the following italicized language in each of the following independent claims as amended.

1. A flocked transfer comprising:
a release sheet;
a release agent on the release sheet;
flock on the release agent; the flock being formed in a desired pattern on the release sheet, the release agent holding the flock to the release sheet;
a *pre-formed, solid, continuous, and self-supporting thermoplastic hot melt sheet*;
wherein at least substantially all of the flock contacts the thermoplastic hot melt sheet;
and wherein there is no binder adhesive positioned between the thermoplastic hot melt sheet and the flock.

26. A flocked transfer comprising:
a release sheet;
a release agent on the release sheet;
flock on the release agent; the flock being formed in a desired pattern on the release sheet; the release agent being located between the flock and release sheet and holding the flock to the release sheet, and
a *pre-formed, solid, continuous, and self-supporting thermoplastic hot melt sheet engaging free ends of the flock, the flock being located between the release agent and the thermoplastic hot melt sheet, wherein at least most of a free surface of the flock is in direct physical contact with the thermoplastic hot melt sheet; and*
wherein the thermoplastic hot melt sheet has a substantially uniform thickness and substantially flat upper and lower surfaces and wherein the flock fibers are substantially perpendicular to the upper and lower surfaces and to the release sheet.

53. A flocked transfer comprising:
a release sheet;
a release agent on the release sheet;
flock adhered to the release agent; the flock being formed in a desired pattern on the release sheet, the release agent holding the flock to the release sheet;
a pre-formed, solid, continuous, and self-supporting thermoplastic hot melt sheet having a length and a width, and a first side engaging free ends of the flock;
a substrate adhered to a second side of said thermoplastic hot melt sheet
wherein at least substantially most of the flock is adhered to the hot melt sheet;
and wherein there is no binder adhesive positioned between the flock and the substrate.

Higashiguchi

Higashiguchi teaches a method for printing a predetermined flock pattern on a substrate using a cross linking type synthetic resin as the printing ink. The printing ink/adhesive is screen printed as a layer 16 on a fabric substrate 12 in a predetermined design pattern. Thereafter, a flock sheet or mount is applied endways to the adhesive layer by pressing with heat the flock fibers against the adhesive layer in the design pattern. Subsequently, the flock sheet is peeled off the substrate surface to transfer the bonded flock fibers from the flock sheet to the substrate. As shown in Figs. 6 and 7, a notable portion of the flock is removed from the substrate as waste with the flock sheet. See Higashiguchi, col. 3, lines 5-18 and col. 4, lines 44-59.

Further, according to Higashiguchi, at col. 4, lines 32-43:

> The synthetic resins suitable for the present invention are those of self-crosslinking type or reactive crosslinking type which are used as the so-called *binders* of printing inks.
>
> As is well known, the synthetic resins used as *binders* not only have the function of binding the pigments together which constitute the ink, but also impregnate the fibrous tissues such as papers and cloths constituting the surface to be printed, and hold together these fibrous tissues and the pigments printed on the surface of the tissue, thereby assuring good adherence therebetween.

Accordingly, Higashiguchi fails to teach or suggest a transfer wherein substantially all or substantially most of the fibers contacts a thermoplastic hot melt sheet since a notable amount of the

flock does not contact an adhesive as required in Claims 1, 26, and 53. Moreover, Higashiguchi fails to teach a transfer having no binder adhesive (see col. 4, lines 32-43 of Higashiguchi) between a pre-formed, solid, continuous, and self-supporting hot melt sheet and the flock or between the flock and the substrate.

Further, Higashigushi's teaching of only applying adhesive onto a substrate to pattern the adhesive in a desired design teaches away from the claimed invention. In one embodiment of the claimed invention, the flocked transfer does not include adhesive in a patterned design, but instead is a transfer that may thereafter be cut into a desired pattern. One skilled in the art upon a reading of Higashiguchi would not be motivated to contact all of the flock with an adhesive as doing so would not only result in waste of the flock, but also would result in waste of the adhesive when cutting the transfer to a desired shape or pattern. Instead, Higashiguchi teaches that the adhesive should be applied only in a pattern and not to substantially all, substantially most of, or most of the flock as claimed.

Abrams

Abrams is directed to a multicolor flock transfer comprising a base sheet having a surface area coated with a release adhesive, precolored flock of at least two different colors that are longer than 0.3 mm having ends adhering to the surface area in the form of predetermined color patterns of a design and a binding adhesive applied to other ends of the precolored flock, whereby the predetermined color patterns of the design of the multicolor flock is adapted to be transferred onto a product. *See* Claim 1 of Abrams. Further, according to Abrams at col. 2, lines 55-68, "[t]he flock 8 is coated with a binder adhesive 10 such as a water based acrylic 1 which binds the flock into a unit. The binder 10 may contain an additional adhesive, a hot melt, for binding the transfer to a substrate..." As shown in Fig. 2 of Abrams, the hot melt surface 12 is placed against the textile 14, thereafter heat and pressure are applied to the release sheet 4 in order to bond the transfer to the substrate. As a result of the binder being applied to the flock, the flock will not be perpendicular to

the adhesive when pressure and heat to adhere the flock to a substrate. The release sheet 4 with the adhesive 6 is then pulled away from the flock 8 to permanently affix the transfer to the substrate.

In view of the above, Abrams, individually, or in combination with Higashiguchi, fails to teach a transfer having no binder adhesive positioned between the thermoplastic sheet and the flock (Claim 1) or between the flock and the substrate (Claim 53). Moreover, Abrams, individually, or in combination with Higashiguchi, fails to teach a pre-formed, solid, continuous, and self-supporting thermoplastic sheet having a substantially uniform thickness and substantially flat upper and lower surfaces, wherein the flock fibers are substantially perpendicular to the upper and lower surfaces and to the release sheet.

Dependent Claims

The dependent claims provide further reasons for allowance.

Dependent Claim 2 is directed to the thermoplastic hot melt being a thermoplastic blank or thermoplastic blank film. (*See also* Claim 28).

Dependent Claim 16 is directed to the release sheet and release agent being located on a first surface of the flock and the thermoplastic hot melt sheet being positioned on a second surface of the flock and the first and second surfaces are in opposing relationship.

Dependent Claim 17 is directed to a thermoplastic hot melt sheet comprising polyurethane. (*See also* Claim 30).

Dependent Claim 18 is directed to the hot melt sheet being cut, before application to the flocked transfer, to correspond to a shape of the flocked transfer. Neither Higashiguchi nor Abrams teaches a hot melt sheet which corresponds to the shape of the flocked transfer. (*See also* Claim 31).

Dependent Claim 19 is directed to the thermoplastic sheet having first and seconds parts, each part with different properties. (*See also* Claim 32).

Dependent Claim 20 is directed to the first and second parts having different melting temperatures. (*See also* Claim 33).

Dependent Claim 21 requires that the first part contacts the flock and is located between the second part and the flock and that the first part has a higher melting temperature than the second part. (*See also* Claim 34).

Dependent Claim 22 is directed to the first and second parts have differing viscosities when the first and second parts are melted. (*See also* Claim 35).

Dependent Claim 23 requires that the first part contacts the flock and is located between the second part and the flock and that when the first and second parts are melted, the first part has a higher viscosity than the second part. (*See also* Claim 36).

Dependent Claim 24 requires that the first and second parts are in the form of films and the films are laminated together. (*See also* Claim 37).

Dependent Claim 25 requires that the thermoplastic hot melt sheet is preformed before application to the flock and substrate. (*See also* Claim 38).

Dependent Claim 27 requires that the transfer of Claim 26 is adhered to a substrate.

Dependent Claim 29 requires that the flock comprises a plurality of flock fibers, wherein the release agent and release sheet are located on a first surface of the flock, and wherein the free surface and the first surface are defined, respectively, by opposing ends of the flock fibers.

Dependent Claim 40 requires that there is no binder adhesive in contact with the thermoplastic hot melt sheet. As discussed previously, both Higashiguchi and Abrams fail to teach a transfer having no binder adhesive positioned between the thermoplastic sheet and the flock.

Dependent Claim 41 requires that the flocked transfer of Claim 26, wherein the flock comprises a plurality of flock fibers and at least most of the plurality of flock fibers are in direct contact with the hot melt sheet.

Dependent Claim 42 requires that the substrate comprises rubber. (*See also* Claim 44).

Dependent Claim 43 requires that a fringe material extends outwardly from peripheral edges of the substrate. (*See also* Claim 44).

Dependent Claim 48 requires that the adhesive component of the hot melt sheet consists essentially of a thermoplastic hot melt material. (*See also* Claim 49).

Dependent Claim 50 requires that the thermoplastic hot melt sheet has a substantially uniform thickness and substantially flat upper and lower surfaces. As discussed previously, both Higashiguchi and Abrams fail to teach a thermoplastic hot melt sheet having a substantially uniform thickness and substantially flat upper and lower surfaces. (*See also* Claim 54).

Dependent Claim 51 requires that substantially none of the thermoplastic hot melt sheet fails to contact the free ends of the flock. As discussed previously, both Higashiguchi and Abrams teach an article having flock which is not in contact with an thermoplastic hot melt sheet. (*See also* Claim 52).

Based upon the foregoing, Applicant believes that all pending claims are in condition for allowance and such disposition is respectfully requested. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,

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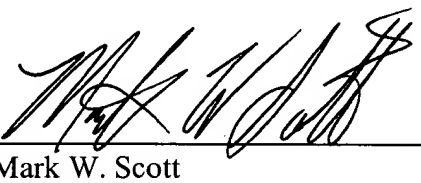
By: 

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